AMENDMENTS TO THE CLAIMS:

Please cancel without prejudice claims 4 and 18-23 and amend claims 1 and 5-7 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A photodetector circuit including a photodiode detector and associated readout circuitry, the circuit comprising a semiconductor handle substrate of one conductivity type supporting the readout circuitry, and an insulating layer on the handle substrate electrically insulating the readout circuitry from the substrate, and the photodiode detector comprising an avalanche photodiode having a first active region of the opposite conductivity type to the handle substrate incorporated in the handle substrate and a second active region of said one conductivity type incorporated in the handle substrate so as to define an active electrooptical junction within the handle substrate between the first and second active regions, wherein there is at least one epitaxial layer on the first active region to provide a resistance in series with the photodiode detector to control the voltage characteristic of the photodiode detector.

2. (original) A photodetector circuit according to claim 1, wherein the insulating layer on the handle substrate comprises SiO_2.

3. (original) A photodetector circuit according to claim 1 or 2, wherein the readout circuitry comprises at least one MOS component.

4. (cancelled).

5. (currently amended) A photodetector circuit according to claim [[4]]1, wherein there are two epitaxial layers comprising a lower epitaxial layer on the first active region which is substantially undoped so as to provide a high resistance and an upper epitaxial layer on the lower epitaxial layer which is of the same conductivity type as the first active region, .

6. (currently amended) A photodetector circuit according to claim [[4]]1, wherein the or each epitaxial layer is provided within a window in the insulating layer.

7. (currently amended) A photodetector circuit according to claim [[4]]1, wherein a metal contact is connected to said at least one epitaxial layer.

8. (original) A photodetector circuit according to claim 7, wherein the metal contact is connected to a selectively doped part of said at least one epitaxial layer.

9. (previously presented) A photodetector circuit according to claim 1, which is adapted to be back illuminated, wherein the substrate has a thinned portion to enable light incident on the back of the substrate to reach the active electrooptical junction.

10. (original) A photodetector circuit according to claim 9, wherein a buried light-shielding layer is provided to prevent light incident on the back of the substrate from reaching the readout circuitry.

11. (original) A photodetector circuit according to claim 9 or 10, wherein a metal contact is connected to a doped layer on the back of the substrate.

12. (previously presented) A photodetector circuit including a photodiode detector and associated readout circuitry, the circuit comprising a semiconductor handle substrate of one conductivity type supporting and electrically insulated from the readout circuitry by an insulating layer, and the photodiode detector comprising a first active region of the opposite conductivity type to the handle substrate incorporated in the handle substrate, a second active region of said one conductivity type incorporated in the handle substrate so that the first and second active regions form a diode, and at least one epitaxial layer on the substrate providing a resistance in series with the diode to control the current-voltage characteristic of the diode.

13. (original) A photodetector circuit according to claim 12, wherein the first and second active regions are formed by implantation of dopant materials of different conductivity types.

14. (original) A photodetector circuit according to claim 12 or 13, wherein there are two epitaxial layers comprising a lower epitaxial layer on the first active region and which is substantially undoped so as to provide a high resistance, and an upper epitaxial layer on the lower epitaxial layer which is of the same conductivity type as the first active region.

15. (previously presented) A photodetector circuit including a photodiode detector and associated readout circuitry, the circuit comprising a semiconductor substrate supporting and electrically insulated from the readout circuitry by an insulating layer, and the photodiode detector having an active electrooptical junction incorporated in a thinned portion of the substrate so as to detect light which is incident on a back surface of the substrate and which is not received by the readout circuitry.

16. (original) A photodetector circuit according to claim 15, wherein a buried light-shielding layer is provided to prevent light which is incident on the back surface of the substrate from reaching the readout circuitry.

17. (original) A photodetector circuit according to claim 15 or 16, wherein a metal contact is connected to a doped layer on the back of the substrate.

18. (cancelled).

19. (cancelled).

20. (cancelled).

21. (cancelled).

22. (cancelled).

23. (cancelled).

24. (cancelled).

25. (cancelled).